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ABSTRACT

This document is a report on a 6-week course on science education in early childhood programs. Attending the conference in Israel were 30 participants representing 21 countries from Africa, Asia, Europe, and the Caribbean. Teaching methods included lectures, workshops, small group activities, professional study visits, and a re-entry workshop to assist participants in returning to their places of employment. Topics included in the course were: (1) the use of media; (2) a rationale for science education in preschool and kindergarten; (3) emotional, cognitive, and language development in early childhood; (4) the Matal Science Program; (5) case-based reasoning and thinking events; (6) making tools for understanding simple scientific concepts; (7) activities with plants; (8) effective communication with parents; (9) using birds to expand children's understanding of their proximal environment; and (10) gender and development. The course included field trips to kindergartens, a science and media center, and other educational settings. Participants also completed individual projects involving the integration of science into the daily early childhood curriculum, creating a kindergarten science curriculum, or using thinking events to teach science. Opportunities to visit holy and historical sites in Israel were arranged for the weekends. Course evaluation results indicated that participants were satisfied with the content and level of the course, valued the opportunity to meet colleagues from different cultures, and were pleased to visit the holy and historical sites of Israel. (Appendices include the list of participants, course schedule and materials, evaluation questionnaire, and the text of the closing ceremony speech made on behalf of the course participants.) (Author/KB)

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ED 414 091

REPORT

COURSE on

SCIENCE EDUCATION IN EARLY CHILDHOOD

9th March - 18th April, 1997

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THE GOLDA MEIR MOUNT CARMEL INTERNATIONAL TRAINING CENTRE
12 David Pinsky Street, Haifa 34351, Israel

MASHAV - Center for International Cooperation,
Ministry of Foreign Affairs, Jerusalem

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GENERAL INFORMATION

Name of Course: Science Education in Early Childhood

Implementing Institution: The Golda Meir Mount Carmel International Training Centre (MCTC)

Objectives:

On completion of the course, the participants will have:

- broadened their knowledge and understanding of the universal developmental characteristics of children of the ages of 4-6 years
- refined their perception of the ways children react to their environment and expanded their knowledge of how to help the child rediscover his known environment in different ways
- deepened their knowledge and skills about integrating scientific concepts with mathematical and language skills
- developed simple tools to be used with 4-6 year olds
- developed strategies for teaching science in a stimulating environment

Dates and Duration: 9 March - 18 April 1997 (6 weeks)

Location: MCTC

Language: English

No. of Participants:

Bulgaria	1	Malta	1
Cameroon	1	Nepal	2
China	1	Nigeria	1
Cyprus	2	Philippines	3
Czech Rep.	1	Russia	1
Georgia	1	Singapore	2
Ghana	1	South Africa	1
India	1	St. Lucia	2
Kenya	2	Tanzania	1
Latvia	1	Thailand	3
Lesotho	1		

Course Staff:

Ms. Janette Hirschmann	Director of ECE Courses in the English language
Ms. Hava Karrie	Course Coordinator; Lecturer on Community Development
Ms. Bracha Steiner	Coordinator of Social Activities;
Ms. Ida Schlesinger	Course Secretary

OVERVIEW

Thirty participants representing 21 countries from Africa, Asia, Europe and the Caribbeans participated in a 6-week course on Science Education in Early Childhood.

The present course was the first of its kind to be presented at the Golda Meir Mount Carmel International Training Centre (MCTC), Haifa.

It was planned to help teachers overcome their resistance to integrating scientific concepts into the existing educational program and to encourage children to develop their natural curiosity by investigating their proximal environment, making and testing hypotheses, drawing conclusions and making generalizations.

The teaching methods were varied and included frontal lectures, workshops and small group activities. Participants made simple tools that could be used with 4-6 year olds. Professional study visits complemented theoretical material.

A re-entry workshop was conducted to assist the participants to prepare themselves for a successful and effective return home and to their places of employment.

In the final written evaluation, the participants expressed satisfaction with the contents and level of the course. They highly valued the opportunity afforded them to meet colleagues from different cultures; they were equally pleased to visit the holy and historical sites of Israel.

Planning

Being on the threshold of the 21st century and witnessing the rapid changes in science and technology, the Ministry of Education in Israel is currently placing much emphasis on the inclusion of science teaching in the curriculum from the age of 4 years. It is believed that children's natural curiosity should be stimulated and that they should be encouraged to ask relevant questions and search for answers through interacting with their environment.

The underlying philosophy is that science should be integrated into the existing framework in a natural way so that children will become aware that science is around us all the time.

It was decided to offer this subject to early childhood educators from developing countries. Integrating science into the educational environment can be done at a very low cost using natural and waste materials. The beneficial effects to children's holistic development are immeasurable.

Various experts in the field were consulted and the program was planned to include physical sciences, botany, zoology, media and visits to relevant educational frameworks.

Admission Requirements:

The course was open to 25-30 women and men between the ages of 30-50. Candidates were expected to have completed academic studies or equivalent professional training in Early Childhood Education in a recognised institution. They should have had at least seven years' experience in the field and should be currently employed as teacher trainers, curriculum planners, supervisors or program coordinators in Early Childhood Education at the district or national level.

A good command of written and spoken English was essential.

Participants

For List of Participants - see Appendix I.

Thirty participants (23 women and 7 men) were chosen from among the 86 applications that were received.

In general the level was very high, the students were highly motivated to learn and showed interest in most of the material presented. A breakdown of the educational backgrounds of the participants follows:

PhD	4	B.A./B.Sc.	10
M.A./M.Sc.	7	T.T. Dip.	9

The participants were employed in the following capacities:

Teachers	4
University lecturers: Asst. Prof./scientific researcher, evaluator	4
Vice-director of T.T. and T.T. lecturers	3
Supervisors/inspectors/educ. officers	6
Principals/directors/owners	4
Trainers	2
Administrator	1
Asst. director of education	1
Senior project officers	2
Program coordinator	3

Many of the participants held senior positions and filled dual roles, e.g. teacher/ trainer, trainer/supervisor, curriculum writer/evaluator, evaluator/researcher, etc.

On the whole, the members of the group were supportive of one another and many close friendships were formed. The participants enjoyed the cross-cultural contact and the ensuing information exchange about early childhood education and strategies for teaching science used in the respective countries.

Course Content and Procedure

For Program of the Course - see Appendix II.

The course opened on 9th March. This was an orientation day with individual interviews with the course director and becoming acquainted with the library.

After an introduction to the MCTC staff the next morning, the group went off on a bus tour of Haifa. After lunch there was a getting acquainted session. It was already evident, at this early stage, that the atmosphere in the group would be very open and accepting.

Ms. Haia Koteff opened the first topic of the course, **media,** with a workshop on the use of the camera for recording events and scientific phenomena in the kindergarten.

The festive opening ceremony was conducted in the evening together with the members of the French-speaking course being conducted concurrently.

The first lecture of the course took place at the pedagogic centre. The National Director of Science Education in the pre-school of the Ministry of Education, Ms.Assia Levita met with the participants and introduced them to the **science program** currently being implemented in the pre-school.

She stressed the importance of training the kindergarten teachers and reported on their frequent reluctance to practice science because of their lack of confidence in the field. She distributed copies of the science curriculum to all the participants.

The pedagogic centre was a good location for the meeting since it provided an opportunity for the participants to see how it is organized and how it operates, particularly as a number of students from the Teacher Training College was using the facilities there. The science kit developed by the Ministry of Education and distributed to all the kindergartens, was on view.

Before Mr. Haim Eshach, one of the main lecturers, started his series of lectures and workshops he requested that the participants complete questionnaires that related to the teachers' attitudes to science teaching, the responsibility for the success of their pupils and their feeling of confidence in teaching science. This questionnaire was repeated at the end of the workshop on teaching events to see whether there were changes in the above variables. The results showed that there were significant changes in their attitude and confidence.

Mr. Eshach posed the question **Should Science be taught in the Kindergarten?** and set about making a very convincing case for doing so. He claimed that teaching science taught cognitive skills like gathering information, learning how to ask appropriate scientific questions, developing the ability to organize and interpret results of experiments and drawing intelligible conclusions based on the results.

He also introduced a methodology for teaching science which he called **case-based reasoning**, i.e. adapting old solutions to explain new situations.

The rest of the week was taken up with discussing children's **emotional needs** (as served by an animal corner on a kibbutz where children take care of and pet the animals), **cognitive development** (according to Piaget) and **language and thinking** (with special emphasis on Vygotsky's theories).

The participants spent several hours, divided in groups according to the role that they fill in their own country discussing their work, the problems they encounter and the means for coping with them. (They divided into the following groups: teachers, teacher trainers, researchers, curriculum planners and supervisors/inspectors.

The results of the discussions of the various groups were very similar - they all seemed to be dealing with the same problems: insufficient governmental support and as a result, lack of funds for equipment, paying teachers and doing research; insufficient teacher training and supervision and not enough cooperation with the parents.

The second week started with a two-day introduction to the **Matal Science Program** for pre-schoolers by Dr. Dina Stachel . This is a structured program with a teacher's guide written in English. The participants enjoyed learning about the program. The fact that it is structured and written makes it possible to implement it without too many difficulties. In countries where the preservice and inservice facilities are sketchy, science can be taught through following the instructions in the book.

The next three days were devoted to studying **case based reasoning and thinking events**. A thinking event is considered to be a real event from everyday life and differs from a laboratory experiment or demonstration constructed to teach and emphasize specific kinds of knowledge.

The child exposed to a thinking event deals with different aspects, not necessarily scientific (ethical, economic, scientific, technological, etc.) of a problem. Each problem may have more than one solution.

Participants witnessed a demonstration of a thinking event in a kindergarten. This clarified many misunderstandings for them. After writing and sharing thinking events in small groups, the participants felt more confident and many of them expressed the opinion that they would like to introduce this methodology to their teachers, some said that they were already doing something similar and some said categorically that it would be complicated for their teachers taking into consideration their low level of training.

Pleasant hours were spent making simple tools for understanding science concepts like weight, transmission of heat (covers for bottles of cold water), lifting mass (using a small lever).

The next module to be dealt with **Activities for knowing the environment with emphasis on the world of plants** was presented by Ms. Niza Yogev and Ms.Tami Neuman. The participants were encouraged to use parts of the plants to make many creative art and didactic activities. This module was received with mixed feelings by the participants, as they felt that they were familiar with the material.

A visit was made to a kindergarten where the participants went on a nature walk with the children. The latter, in small groups, were given different assignments. Each group was accompanied by a parent. This was a very good example of how parents can be involved in activities in the kindergarten.

A second workshop on media was conducted. The participants learnt how to make identity cards with the children and how to make books using newspaper pictures. They enjoyed working in small groups and being creative together.

A very interesting visit was made to a **science and media centre** where children spend a whole morning every three weeks being involved in doing scientific experiments and learning (by doing) about the various channels of communication - radio, video, photography, etc. This centre is equipped with sophisticated equipment which the children learn to use.

Two workshops meant to develop skills for **effective communication with parents** were presented by Ms. Georgette Karp and Ms. Janette Hirschmann. These were very much appreciated by the participants who felt that they had learnt some interesting and effective techniques for their work in this field.

The final module was **The use of birds as a means of expanding children's knowledge of their proximal environment.** Most of the encounters with the lecturers, Ms. Yael Adler and Mr. Len Aronson, took place at the zoo and the Biological Institute.

The participants also observed using birds while working with children with special needs. In addition they visited different kindergartens using the kit developed by the Ministry of Education Science Program, the Matal Program and a school science program.

A session was conducted by Dr. Rina Michalowitz, the recently retired National Director of Pre-school Education on the topic of **Are we educating for today or tomorrow?** The point was made that if we do not educate for today we will not be able to educate for tomorrow.

In a final media workshop, the participants working in small groups created newspapers that reported on the course on **Science Education in Early Childhood**. Some very creative and highly amusing editions were "published".

The didactic part of the course ended with a panel in which some of the lecturers participated. There was no doubt that the section on "case based experiences" and "thinking events" evoked great interest among most of the participants.

The participants divided into groups according to the role they fill in their countries (the same groups as they had been in to discuss their work at the beginning of the course).

The participants were requested to choose a common problem that they would like to analyse from the point of view of their respective countries and to recommend solutions for the year 2000 in relation to policy and implementation in the field.

(Please see Appendix III).

A workshop on **Gender and Development** conducted by Ms. Fannette Modek was much enjoyed and very enlightening. It was an opportunity for the participants to learn much about each others' cultures.

A week was set aside for following special interests, individual study in the library, meeting with experts, visiting educational settings and consulting with resource people for writing their individual project proposals. These were for some small project that the participants themselves would be able to implement in their own settings.

The projects were presented orally to the whole group and to the course director. Some were written individually and others were done in groups. The projects dealt with topics that were developed to integrate science activities into the daily curriculum; creating a science curriculum for the kindergarten; teaching science using thinking events.

It was clear that the participants had given much thought to writing their projects. Those who had worked together as a group commented on how enriching the experience had been.

On the last day, the participants were exposed to a re-entry program which is designed to remind them of all the experiences they had had as a group or individually during the past 6 weeks, and to make them aware of the changes that may have taken place within themselves. They also considered that their colleagues at home had not undergone similar experiences during this period. In light of this it was stressed that any changes introduced by them be made slowly and cautiously, when and if at all possible.

The participants expressed their feelings regarding the living in the multi-cultural group and the enriching experience they had had professionally and socially.

At the festive closing ceremony, Ambassador Ze'ev Dover represented the Ministry for Foreign Affairs, spoke about the continued desire for international cooperation and distributed the certificates. A member of the group expressed the thanks of the group.

Accommodations

The participants were housed at the MCTC Centre; each room was shared by two trainees. Weekly laundry service was provided and the participants were generally satisfied with the conditions.

All participants were medically insured with the Shiloah Sick Fund and had free access to the doctor as the need arose.

Bus transportation was provided for study tours and trips, and was found to be satisfactory.

Evaluation by the participants

For evaluation form - see Appendix IV.

Before the end of the course the MCTC Director and the Director of the Course interviewed the participants in groups according to the continents they represented. Each member of the group expressed his/her individual opinion about the course, living together with an international group and the living conditions in the Centre.

All the participants found that the course had been interesting and well organized. They very much enjoyed sharing information and experiences with the members of the group. For many in was the first time that they had had the opportunity to meet people from so many different cultures and countries.

On the whole they were comfortable in the house although some commented that the food, although adequate, could have been a bit more varied.

In the written evaluation at the end of the course more detailed information was obtained. The professional level of the course was just right for the majority of the participants. Eighty-seven percent rated the course content, the quality of instruction and teaching materials and the professional visits as high and very high.

Some participants suggested that less time should be devoted to botany and zoology and that time should be added for planning "thinking events" and studying the Matal program. More visits should be made to kindergartens to observe the interaction between the teachers and the children.

They were impressed with the enthusiasm and devotion of the lecturers and the methodologies used by them. They felt that the lecturers were very knowledgeable, but because of their lack of proficiency in the English language could not always impart everything they knew.

Despite the fact that for 50% of the participants only, the course included much that was new, for most of them the course lived up to their expectations (80%) and increased their professional capacity (87%). 87% acquired knowledge that could be applied or adapted in their future work and in 90% of the cases, the institutes, colleagues and superiors would benefit from their participation.

Besides sharing their newly acquired knowledge with their colleagues, etc., the participants will organize and conduct in-service training for teachers to integrate science in the program, will include science education in their lectures at Teachers Colleges; they will integrate science in their daily programs, and will help to redesign the curriculum to include teaching science.

A request was made that more than one person from each country participate in the same course so that they can consult together.

On the whole, the course was very interesting, well planned and organized. Everyone was enriched in some way. Special mention was made about the flexibility of the Course Director who tried to meet the needs of the participants by making adjustments throughout the program.

The participants were very impressed by the friendliness and hospitality of the Israelis, although they would have appreciated being able to enjoy more of this. They expressed admiration that "many people from different cultures call this country their own and are determined to survive and maintain their identity against all odds".The participants were very impressed by the warmth and hospitality extended to them in the MCTC.

All the participants thought that the course on Science Education in Early Childhood should be repeated. They suggested that certain changes be made in the program:

- More time should be devoted to the Matal program, to thinking events and to media.
- Less time should be spent on teaching about plants and animals as most of the participants are familiar with this.
- Since field visits clarify what is learnt in the classroom, more visits should be made to kindergartens to see how science is integrated into the daily program and then to write a curriculum using these activities as a base.

The following are a number of topics suggested for additional courses:

general preschool education
multicultural situation and preschool education
mathematics in the ECE
training of trainers
parent-teacher relations
how to implement a new approach in an existing setup
evaluation of the curriculum

Evaluation by the Staff

This was the first course on **Teaching Science in Early Childhood** and as such should be viewed as an experiment. Some of the objectives viz. understanding the importance of teaching science in kindergartens and integrating it into the existing curriculum, were achieved.

The level of the group was very high, the participants knew what they wanted to get from a course of this nature and each person came away enriched. In their evaluation of the course they criticised constructively and gave positive suggestions. These suggestions probably reflect their own needs.

Should this course be repeated, the program must be planned differently. The balance between physical sciences, biology, zoology, media and professional observation visits should be changed. Particular attention should be paid to the staff of lecturers who, although knowledgeable in their field were not fluent enough in the English language.

The special interest week was most beneficial, as the higher the level of participants, the more time is needed for reflection, individual study and special interests.

It is also important to make it possible for participants to write their project in small groups. High level professionals from different backgrounds contribute much to the discussions and these become an integration process of the topics learnt.

In analysing the pre and post test questionnaire completed by the participants it was found that they had changed their attitudes about teaching science using "thinking events' in the kindergarten. They now felt more positive about doing so and had gained confidence during the 4-day workshop.

It would therefore indicate that the participants need to be given clear strategies for teaching science in the kindergarten. Those who were going to use the Matal program also felt much more confident.

It is recommended that this course be repeated in 1999.

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MCTC'S DIRECTOR'S COMMENTS

The course announcement caught the attention of candidates of good quality, both on a personal and professional level. Those accepted were those that fulfilled the basic criteria of being involved in either developing a science curriculum, supervising and/or teaching science to young children. As in every "first" experience of a kind the course planner/director learns as much as her students, and in this case the frank and honest evaluation of the participants will be extremely useful in planning a second course.

The subject is relevant and timely as more and more countries are inserting pre-school education in the formal educational system. And, Israel's long experience is applicable as confirmed by the participants of the course.

It is to be noted that the sponsors of the two Singaporean participants considered the course sufficiently innovative to cover the complete cost of training.

The group, as previously mentioned, was of a high quality. The participants were on the whole verbal and influential in their circles, and undoubtedly will constitute useful centers of reference for MCTC in its future projects.

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LIST OF LECTURERS

Adler Yael, M.A.	Lecturer in Preschool Programs in Biology and Education
Aronson Len, M.A.	Lecturer and researcher in "Animal Behavior", Biological Institute
Hirschmann Janette, B.A.	MCTC staff
Ishah Haim, M.A.	Teaching Assistant, "Technion" - Institute of Technology, Haifa
Karp Georgette, M.A.	Social worker
Koteff Haia, M.A.	Lecturer on Media, Oranim Teacher Training College
Levita Assia	In charge of Science Education in the Preschool, Ministry of Education
Michalowitz Rina, Ph.D.	Retired National Director of Preschool Education, Ministry of Education
Modek Fannette, M.A.	MCTC staff
Nebat-Gal Ruth, M.A.	Lecturer on Literacy in ECE, Oranim Teacher Training College
Neuman Tami, M.A.	Biologist
Parish-Plass Jim, PhD	Clinical Child Psychologist, Lecturer, "Oranim" Teacher Training College
Shtachel Dina, PhD	Researcher, Matal Science Program
Yogev Niza, M.A.	Lecturer, Oranim Teacher Training College
Zmorah Hanna, M.A.	Lecturer, Oranim Teacher Training College

APPENDIX 1

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Course on:

Science Education in Early Chilhood

9 March - 18 April, 1997

LIST OF PARTICIPANTS

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COUNTRY	NAME & SURNAME	ADDRESS	PROFESSION	OCCUPATION & PLACE OF WORK
ST. LUCIA	Ms. Ruth Christiana Phillips Fevrier	La Clery, Castries P.O.B. 3066 La Clery Castries, Saint Lucia WI TEL: 758-4523631	Teacher	Acting Curriculum Officer Ministry of Education, Culture, Labour and Broadcasting Laborie Street, Castries, Saint Lucia TEL: 758-4517710
	Ms. Myrtle Murray	P.O.Box 220, Castries Saint Lucia WI TEL: 4528609	Pre-School Administrator	School Administrator Wee Wisdom Montessori Pavree Road P.O.Box 220, Castries, St. Lucia W.I. TEL: 758-452-6674 Fax: 758-451-6677
TANZANIA	Mr. Clarence Mwinuka	Lugarawa Mission P.O.Box 54, Njombe	B.Education, Teacher	Teacher Trainer Principal Secretary Ministry of Education & Culture P.O.Box 9121, Dar-es-Salam TEL: 051-110146
THAILAND	Ms. Siriphan Tantiratpaisarn	625/1 Paholyothin Rd., Soi 35, Bangkok 10900 TEL: 2-5110611	M.A. in Education	Instructor Rajabhat Institute Suan Dusit 259 Ratchasima Rd., Bangkok 10300 TEL: 2-2414656
	Ms. Naiyana Wongsopa	176 Pornthip Village Chaengsanit Rd., Yasothorn TEL: 45-712327	B.A. in Education	School Principal Santithan Vidhayakhom School Saha Pattana Road, Ampur Muang Yasothon 35000 TEL: 45-712766 TELEFAX: 45-712327

COUNTRY	NAME & SURNAME	ADDRESS	PROFESSION	OCCUPATION & PLACE OF WORK
THAILAND	Ms. Dusida Kumropwong	1/101 Chinnakhet Soi 1/19, Tungsonghong Donmuang 10210 Bangkok TEL: 9540630 / 5892810 5895240 FAX: 9540631	B.A. in Early Childhood Education	Director and Owner Chatchalerm Kindergarten 1/101 Chinnakhet Soi 1/19, Tungsonghong Donmuang 10210 Bangkok TEL: 9540630 / 5892810 / 5895240 FAX: 9540631

Appendix II

APPendix II

COURSE on

SCIENCE EDUCATION IN EARLY CHILDHOOD

9th March - 18th April 1997

PROGRAM

Mashav - Center for International Cooperation
Ministry of Foreign Affairs
Jerusalem

THE GOLDA MEIR MOUNT CARMEL INTERNATIONAL
TRAINING CENTRE
12 David Pinsky Street, Haifa 34351, Israel

Appendix II

MARCH 1997

Sunday 9th

Arrival

Personal interviews

12.00 Introduction to the library (Small group)
- Ms. Aliza Katz

Monday 10th

8.30 Introduction to the MCTC staff

9.30 Depart for bus tour of Haifa

13.00 Imtroduction to MCTC
- Ms. Fannette Modek, Director MCTC.
Explanation "Rules of the House"
- Ms. Shoshana Levy

2.30 Getting acquainted
Presentation of the program

16.00 Introduction and workshop:
The use of media in the kindergarten ..... the camera
- Ms. Haia Kotev, lecturer, Oranim Teachers College

18.30 Official Opening

Tuesday 11th

8.00 Depart for visit to Pedagogic Centre
Lecture / Discussion demonstration :
Science Education in the Pre-school
Ms. Assia Levit, National Director of Science Education in Preschool, Ministry of Education

14.30 Introductory lecture:
"Why should we teach science in kindergartens"
- Mr. Haim Ishah, Asst. Prof., Technion, Haifa
Researcher in Teaching and Learning.
Research topic: Misconception of science concepts

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Wednesday 12th

7.30 Depart for a visit to Kibbutz Gesher Haziv in the North of Israel

Meet with Ms. Hanna Zmorah, our hostess

- Walk around the kibbutz and discuss "Life in the kibbutz"
- Visit a kindergarten and first grade
- Lecture/discussion
  The effect of the environment on the needs of young children
- Visit the animal corner
- Lunch
- Summing up

14.00 Return to MCTC

Thursday 13th

8.30 Lecture/discussion:
Cognitive development in childhood
- Dr. Jim Parish-Plass
  Clinical Child Psychologist, Lecturer at Oranim Teachers College

10.30 contd

14.00 Introduction to the library (small group)
Ms. Aliza Katz

14.30 Participants tell about their work

Friday 14th

8.30 Lecture/discussion:
Language and Thinking
Ms. Ruth Nebat-Gal, Lecturer, Oranim Teachers College

10.30 contd

14.00 Lecture/discussion:
Thinking events in science
- Mr. Haim Ishah

Saturday 15th

6.30	Depart for all-day excursion Jerusalem Visit historical and Holy Sites
	Return to MCTC for supper

Sunday 16th

Open

Monday 17th

8.30	Lecture/discussion/workshop: Teaching Science in Early Childhood - Dr. Dina Schtachel, Lecturer, Research and Development of Programs for Cognitive Thinking in Early Childhood
10.30	contd.
13.30	contd

Tuesday 18th

8.30	Lecture/discusssion: Teaching science in early childhood - Dr. Dina Schtachel
10.30	contd.
13.30	contd.

Wednesday 19th

7.30	Depart for Kibbutz Hahotrim to observe a science program in action in the kindergarten - Mr. Haim Ishah
	Return for lunch
13.30	Lecture/discussion/workshop: Thinking events in science Mr. Haim Ishah

Thursday 20th

8.30	Lecture/discussion/workshop: Thinking events in science Mr. Haim Ishah
10.30	contd.
13.30	contd.

Friday 21st

8.30	Discussion/workshop: Thinking events in science Mr. Haim Ishah
10.30	contd.
13.30	Reflection and summing up

Saturday 22nd

9.45	Depart for visit to Technoda Science Museum
	Lunch at MCTC
Afternoon	Open

Sunday 23rd

7.50	Depart for excursion to Galilee and the Golan Heights
	Return to Haifa for supper

Monday 24th

10.00 a.m. 11.00	Workshop and summing up: The use of cameras in the kindergarten Ms. Haia Kotev
13.30	Contd.

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Tuesday 25th

9.00	Lecture/discussion/workshop: Activities for knowing the environment with emphasis on the world of plants - Ms. Niza Yogev, Lecturer, Oranim Training College - Ms. Tami Neuman, Teacher of Biology
11.00	contd.
13.30	contd.

Wednesday 26th

9.00	Lecture/discussion/workshop: Activities for knowing the environment Ms. Nira Yugev Ms. Tami Neuman
11.00	contd.
13.30	contd.

Thursday 27th

7.30	Depart for Yokne'am
	Visit a science centre for young children Meet Ms. Haia Kotev
11.15	Proceed to Tivon
	Observation visit to a kindergarten accompanied by Niza Yogev and Tami Neuman
	Picnic lunch
	Field trip
	Return to the centre for supper

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Friday 28th

9.00	Activities for knowing the environment Ms. Nira Yogev & Ms. Tami Neuman
	contd.
11.00	contd..
13.30	Summing up

Saturday 29th

Open

Sunday 30th

Open

Monday 31st

8.10	Walk over to the Zoo
	Meet Ms. Yael Adler, Lecturer in preschool programs in biology and education Introduction and workshop at the zoo
	Return to MCTC for lunch
13.10	Walk over to the Biological Institute
14.00	Lecture/demonstration: Use of the world of birds as a means of expanding children's knowledge of their proximal environment - Mr. Len Aronson, lecturer and researcher on "Animal Behavior", Biological Institute

April 1997

Tuesday 1st

8.00	Depart for a visit to a school to see a Science Center
11.30	Early Lunch
12.15	Walk over to the Zoo
12.30	Preparation for observation Ms. Yael Adler
13.30	Observe the use of birds in special education - Mr. Len Aronson
14.30	Lecture/demonstration: Use of the world of birds as a means of expanding children's knowledge of their proximal environment - Mr. Len Aronson

Wednesday 2nd

8.00	Depart for observation visit to a kindergarten in Haifa using the Matal Science program
	Summing up
Afternoon	Open

Thursday 3rd

8.10	Walk over to the zoo
8.30	Lecture/demonstration: Useof the world of birds as a means of expanding children's knowledge of their proximal environment - Mr. Len Aronson
10.30	contd.
11.30	Return to MCTC
12.00	Closing Ceremony of the French Course
13.30	Summing up at MCTC Ms. Yael Adler

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Friday 4th

8.30	Panel discussion: Teaching Science in Early Childhood Ms. Yael Adler, Mr. Len Aronson, Mr. Haim Ishah and Ms. Niza Yogev
10.30	Workshop on Gender and Developement Ms. Fannette Modek
13.30	Contd.

Saturday 5th
& Sunday 6th

6.30	Depart for two-day tour of the Dead Sea, Massada and Jerusalem Overnight at the Mevo Jerusalem Hotel - Tel: 02-5376532

Monday 7th

	Special Interests and writing projects
14.30	Lecture/discussion: Use of media in the kindergarten ----- newspapers - Ms. Haia Kotev

Tuesday 8th)
Wednesday 9th) Special interests and
Thursday 10th) writing the final project
Friday 11th)

Saturday 12th

Open

Sunday 13th

Open

Monday 14th

09.00	Small group discussions on: What is applicable in my educational framework
13.30	Presentation

Tuesday 15th

8.30	Presentation of projects
10.30	contd.
13.30	contd.

Wednesday 16th

8.30	Presentation of projects
10.30	contd.
13.30	"Re-entry" session
14.30	Evaluation

Thursday 17th

17.30	Closing Ceremony and Distribution of Certificates
	Personal interviews

Friday 18th

	Personal interviews
	Departure

Shalom and best wishes for a safe journey home !!!

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Appendix III

THE GOLDA MEIR MOUNT CARMEL INTERNATIONAL TRAINING CENTRE
12 David Pinsky Street, Haifa 34351, Israel

COURSE on SCIENCE EDUATION IN EARLY CHILDHOOD
9th March - 18th April, 1997

In this final summing-up discussion, you are requested to form groups according to the groups you joined at the beginning of the course (administrators, supervisors, planners, teachers,).

Please choose a common problem that you would like to analyse from the point of view of your respective countries, discuss it and recommend solutions for the year 2000 (policy and implementation in the field).

Enjoy the discussion!!!

PROBLEMS FACED BY THE TEACHERS

Given the topic for discussion for the final summming up of the course one probrlem that was most evident crossing all cultures or schools was the parents- teachers relationship.

I. **Lack of parent orientation**

II. **Indifference of parents**

a. Parents with too much expectations from the teachers.

b. Parents who does not give any trouble but leave everything in the care of the teachers.

c. Parents who does not giver enough attention to their child.

III. **Handling of children brought up by grandparents or single parents.**

IV. **Underqualified Teachers**

SUGGESTIONS AND SOLUTIONS:

I. Parent-Orientation

I a. Before the start of classes, the administration with the help of teachers can conduct a parent orientation activity /seminar. The said activity or seminar would include the following contents:

a. What early childhood training is all about.

b. Inculcating the developmental stages and characterisitics of children in learning.

c. Informing them about the school philosophy and policies.

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II. Parent -Teacher Workshop

a. Workshops to be conducted for parents in child education in school. The said workshop will be done in small groups with the equal participation by parents and teachers in the prescence of a school psychologist/ guidance counselor.

b. Workshop for parents alone facilitated by the teacher or psychologist regarding the role of parents in child education in school.

III. Communication

Open and frequent commuinication between grandparents/single parents and the teachers.

This can be done through the following suggestions:

a. Suggestions to the care-givers on how to deal with the home situation based on child's behavior in school. *

b. conducting workshop or meetings for "indifferent parents" at the timing suitable for them.

*This suggestion can take a longer time (e.g. maybe a year).

IV. Children's Newsletter could include :

a. one or two pages for the parents which would inform them about child development .

b. informing them about various or similar activities held in different schools and community concerning children.

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Curriculum Planners

- Cyprus
- Czech
- Nepal
- Philippines

Problem:

1. Concrete Curriculum Guidelines for Preschool (Integrated Approach)

2. Concrete Program for children or Early Childhood Education that's fund / supported by the government.

* Czech
- they have low birth rates
- preschools will have to close due to lack of preschool children
- all financed
- thorough curriculum

* Nepal
- low budget for education
- low percentage of literacy

* Cyprus
- no textbooks
- no concrete written curriculum for Early childhood

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RECOMMENDATIONS: / SOLUTIONS :

** Long Term solutions :

1. Draft and frame a concrete curriculum guidelines for preschool using the integrated approach. This is in collaboration with the various authorities and educators from different universities, Pedagogic centers and intitutions , Ministry of Education, Teachers Union, Teacher Trainors and Supervisors.

*Philippines

- Meet with these people and make programs that could complement and supplement the curriculum for early childhood.
- Link with other government and Non-government Organizations(NGO) to focus on early childhood education.

2. Write resolutions / policies and meet with authorities in making kindergarten or Early childhood education (3 to 6 years) compulsory. Public schools should be funded and supproted by the government in terms of materials, facilities, teachers' salaries, textbooks and trainings.

3. Evaluate and Analysis - to put up or frame a good guidelines in measuring and evaluating the improvement or development of project, the implementation and analysis of the program for Early Childhood.

4. Make amendments and rewriting of guidelines for final implementation.

PROCESS OF SCIENTIFIC THINKING

- Systematic enquiry
- Communication
- Science in everyday life
- Health and Safety

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CONCEPTS:

- Life Process - growth
- Human Beings - Senses, Oneself and Body Parts
- Plants and Animals
- Living and non-living things
- Materials and Properties - e.g. colors, shapes & sizes , textures
  Measurement and Volume,
  Mirror and lenses
- Electricity
- Forces and Motion
- Light and Sound
- Ecology - Enviroment and recycling
  Weather

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CHALLENGES

- Curriculum changes and development and dissemination
- Teacher Training/ Training of Trainers /flexibility
- Policy changes and development
- Research
  New research , dissemination and documentation

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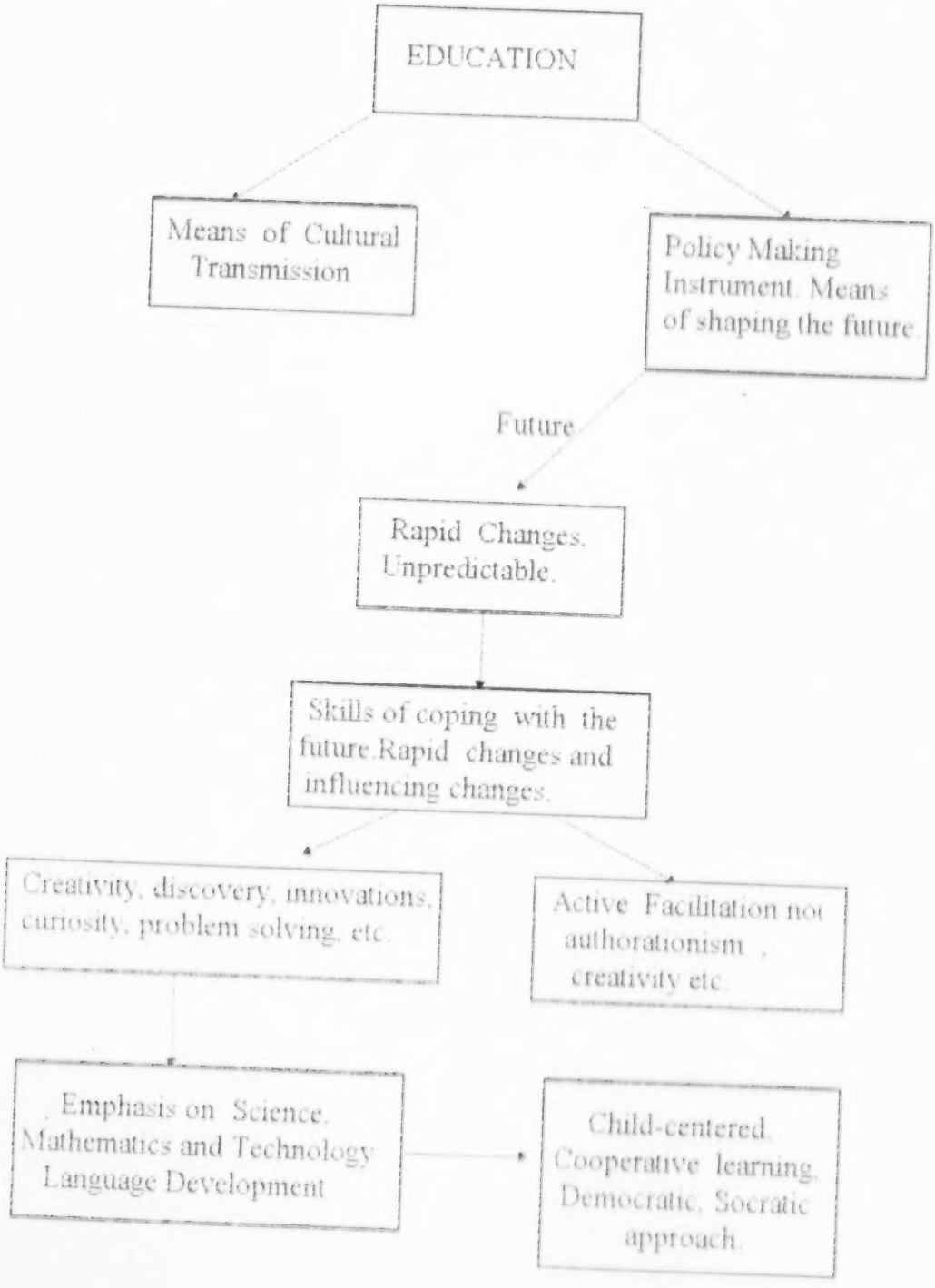
EDUCATION
Means of Cultural Transmission
Policy Making Instrument. Means of shaping the future
Future
Rapid Changes. Unpredictable.
Skills of coping with the future Rapid changes and influencing changes.
Creativity, discovery, innovations, curiosity, problem solving, etc.
Active Facilitation not authorationism , creativity etc.
Emphasis on Science. Mathematics and Technology Language Development
Child-centered. Cooperative learning. Democratic, Socratic approach.

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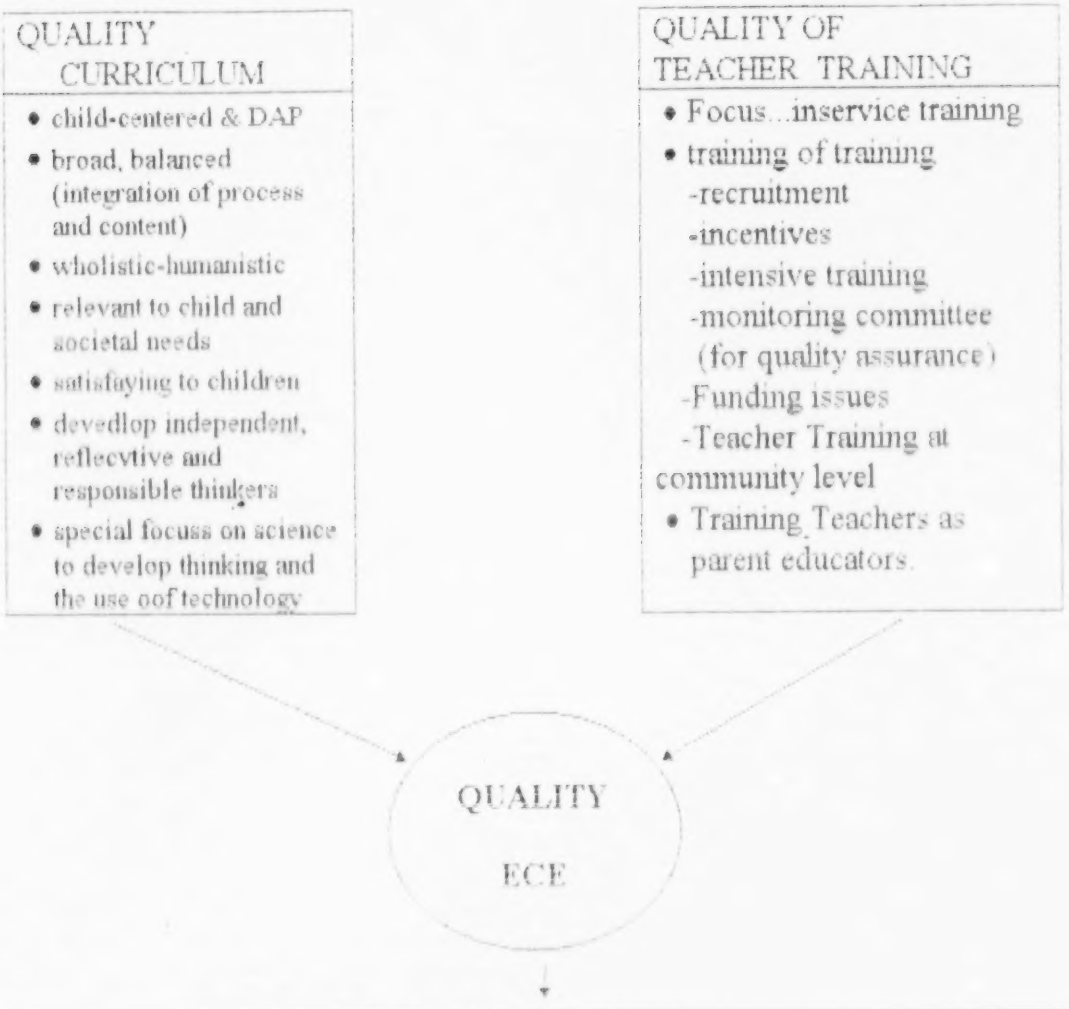
QUALITY
CURRICULUM
• child-centered & DAP
• broad, balanced (integration of process and content)
• wholistic-humanistic
• relevant to child and societal needs
• satisfaying to children
• devedlop independent, reflecvtive and responsible thinkera
• special focuss on science to develop thinking and the use oof technology
QUALITY OF
TEACHER TRAINING
• Focus...inservice training
• training of training
-recruitment
-incentives
-intensive training
-monitoring committee (for quality assurance)
-Funding issues
-Teacher Training at community level
• Training Teachers as parent educators.
QUALITY
ECE
QUALITY PARENT EDUCATION
• sensitizing parents to DAP children
• strategies
1. parents orientation
2. parent-teacher conferences
3. open - house
4. parentss as advocates for research work
5. social functions...
a. slide shows
b.festivals(sports;outings; etc)
c. fathers only night
-workshops
a. hands on workshop with parents and children
b. tapping parents as resource persons (guides; story telling, conduct workshop, cooking, talk about what they do)
-newsletters/ communcation booklet
-parent education series (based on identified needs of parents)

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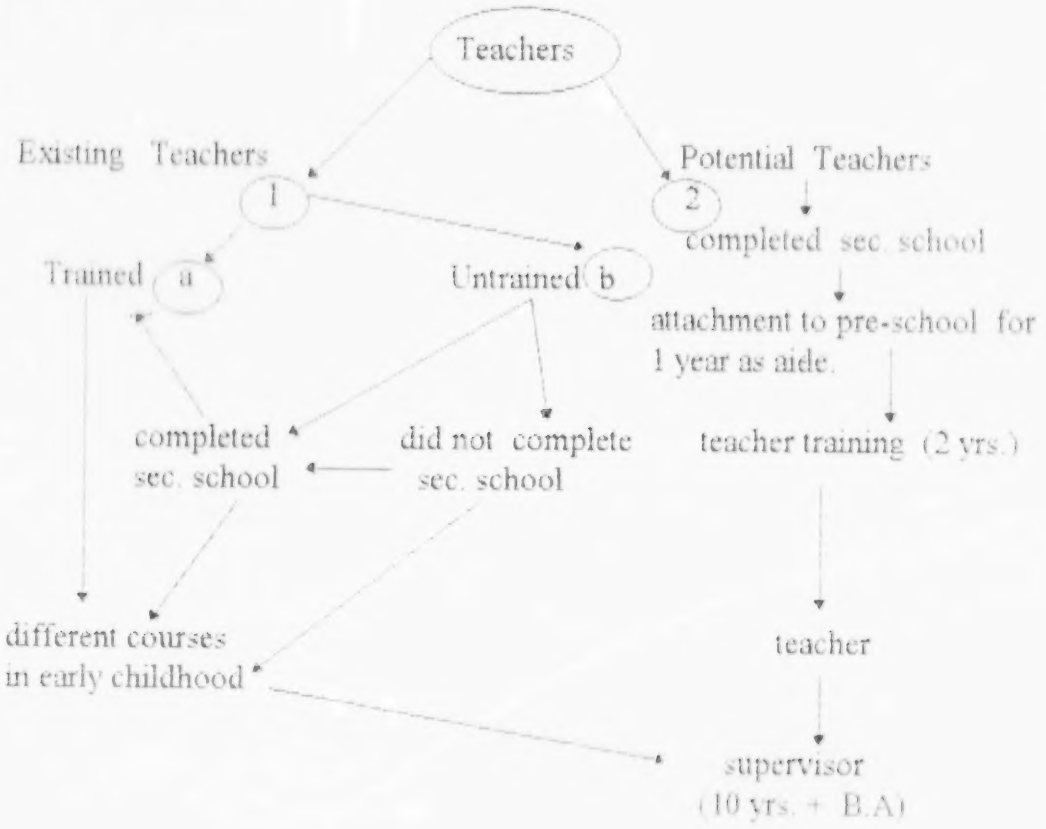
TRAINING OF PRE-SCHOOL PERSONNEL



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CONCEPTS	SKILLS	OBJECTIVES
Weather	Observing	-to use weather to direct child to make his own observations
	Asking Relevant Questions	-to develop understanding of the world around him
	Making Experiments	-to help the children understand the various elements of weather e.g. the wind, clouds, temperature etc
	Interpreting Results	-to help the children learn about the relationship between climatic phenomena and the beahior of human beings, animals and plants
	Describing/ Identifying	
Plants and Animals	Observing	-to foster the children's obsevation and appreciation of natural world
	Appreciation of MNatural World	-to develop the child's awareness of the seasonal changes that takes place in the natural environment

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CONCEPTS	SKILLS	OBJECTIVES
Texture	Feeling/Use of Senses	-to feel and identify the texture of materials and what they are made of
	Identifying and Selecting Appropriate Function of such Materials	-to identify and develop awareness of some factors in choosing material for a particular purpose.
	Developing Psychomotor Skills	-to identify the different uses of rubber
		-to develop the awareness about the variety of objects made of one material
	Describing Comparing, Identify	-to identify functions of various textures in material
Measurement and Volume	Comparing	-to develop ability to compare and measure weights and sizes of objects
	Problem Solving	-to develop critical thinking on various related problems on measurement
Mirrors and Lenses	Observing	-to observe properties of mirrors
	Identifying	-to identify and compare types of mirror and lenses as concave, convex etc
	Comparing	-compare opaque and transparent objects
Environment and Recycling	Construction	-to construct and make recycled objects into something usable
	Sorting	-to sort out garbage into bio and non-biodegradabl

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Appendix IV

MASHAV
Center for International Cooperation
Evaluation Unit
P.O.B. 13006
Jerusalem 91130, Israel

Questionnaire for Participants at
The Golda Meir Mount Carmel International Training Center
12 David Pinsky St., Haifa 34 351, Israel

Course on _____ Dates _____

We ask your cooperation and assistance in planning future courses, by filling out this questionnaire, anonymously, in as detailed and frank manner as possible.

Thank You!

* * * * * *

1. Previous information on the course:

1.1 How did you find out about this course?

- Through friends [2]
- Through my employer [10]
- Through the Israeli Embassy [10]
- Others (please specify) Min of Ed (3) [ ]
  Min of Finance (1)
  TIEC (1)

1.2 Who took the initiative for you participation in the course?

- I myself [9]
- My employer [11]
- My government [8]
- Others (please specify) Israel Embassy [ ]
  Supervisor 1
  TIEC 1

1.3 Did you receive an adequate description about the course?

Yes [22] No [7]

1.4 When did you find out that you were accepted for the course?

- 4 weeks or more before the course [17]
- 3 weeks [4]
- 2 weeks [5]
- 1 week or less before the course [3]

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2. CONTENTS AND STRUCTURE

Components

	RATING				
	Very High	High	Aver.	Low	Very Low
2.1 Course Content	6	19	5		
2.2 Quality of Instruction	6	18	6		
2.3 Quality of Teaching Material	11	13	5		
2.4 Professional Visits	18	6	5		
2.5 Language Proficiency of Lecturers		6	22	1	
2.6 Group Composition	3	24	3		
2.7 Social Program	11	12.	6		

2.8 Please indicate your opinion on the professional level of the course for your needs, by marking "X":

Too high [1] Just right [26] Too low [1]

2.9 Please indicate subjects or field trips which in your opinion should be added or dropped from the curriculum:

_____

_____

_____

2.10 Comments on part two:

_____

_____

_____

3. CONDITIONS AND FACILITIES

	RATING				
	Very High	High	Aver.	Low	Very Low
3.1 Accommodations	6	13	9		
3.2 Food	4	18	7		
3.3 Opportunities to meet Israelis	8	5	9	1	
3.3.1 Home Hospitality	8	15	5		
3.3.2 Special Interests	9	14	4		
3.4 Study Facilities - Library	5	12	9		
3.4.1 Classrooms	8	17	4		
3.4.2 Audio-Visual Equipment	9	16	3		
3.5 Medical Care	6	12	3		

3.6 Comments on part three

4. OVERALL EVALUATION

(Please give your rating or mark *N.A.* - Not Applicable)

	RATING				
	Very Much	Much	Aver.	Little	Very Little
4.1 Did the course include much that was new for you?	4	14	10		1
4.2 Did the course live up to your expectations?	13	11	4		
4.3 Did the course increase your professional capacity?	12	14	2	1	
4.4 Did the course increase your managerial capacity?	5	10	4	3	1
4.5 Did the course increase your teaching capacity?	13	9	4	1	
4.6 Did you acquire applicable or adaptable elements for your future work?	15	9	2		
4.7 Will the course increase your chances for advancement & promotion?	7	6	7	1	2
4.8 Will your institution, your colleagues & superiors benefit from your participation in the course?	15	12	3		

5. THE FUTURE

5.1 How do you intend to use insights gained during the course in your future work?

_____

_____

_____

5.2 For future planning can you indicate what particularly impressed or disappointed you during your stay in regard to:

5.2.1 *The Country and the People:*

_____

_____

_____

5.2.2 *The Course:*

_____

_____

_____

5.3 What, if any, follow up activities in your country do you recommend?

_____

_____

_____

5.4 Are you aware of "Shalom" Clubs for alumni of Israeli courses ?

YES [ ] NO [ ]

5.5 Comments on part five:

_____

_____

_____

6. Do you think that the course on "Science Education in Early Childhood" should be repeated?

If so: YES (26)

6.1 What changes do you think should be made in the program of studies?

-

-

-

6.2 Do you have any suggestions about this course or any other ideas about topics that could be relevant for future courses?

-

-

-

Thank you for your cooperation!

Appendix I

The Closing Ceremony of The Science Education in Early Childhood Course

Speech on behalf of the participants of the course

(17th April 1997)
by Phaello Ntsonyane

The honourable representative of Centre for International Cooperation ,the Ministry of Foreign Affairs Mr. Zeev Dover
The honourable Head of the Israel Committee for UNESCO, Mr David Harrari
Honourable members of the diplomatic core
The Director of the Golda Meir International Training Centre
Distinguished Guests
Ladies and Gentlemen

It is with great humility and honour that I stand before you today, the 17th of April, 1997, on behalf of my colleagues on this occasion of the end of course ceremony of the Science Education in Early Childhood program.

Permit me to begin by thanking the Israeli government, the organisers of this program, the Director of the Golda Meir International Training Centre (MCTC) and most particularly our beloved Janette, the coordinator of the programme, for conceiving such plausible ideas of which we count ourselves lucky pioneers, and beneficiaries; not forgetting our respective governments for permitting us to attend such an enriching programme.

We want to assure you that we found the experience very worthwhile, the Israeli history very rich, the people very open and hospitable.

At this juncture we want to register special thanks to all our lecturers whom we found very knowledgeable with no reservations in sharing their knowledge. We are also positive that, in some little ways, they also learnt from us. Special recognition is given to Dr. Dina Stachel for her MATAL Early Childhood Program, and Haim Ishah for his Thinking Events which now seem to be our new language and way of thinking. The plants and the smell of the farm; the noises and riches of the zoo and the quacking of the birds will ever remain imbibed in our memories. We firmly believe the experience was worthwhile and we shall never be able to evaluate the impact it has had on us. We can only appeal to the Israeli government, the MCTC centre, and the organisers of this Early Childhood Education programme, to continue relentlessly with their duties, especially as God's chosen people, to pay attention to children's needs; children are the pride

and future of every nation, for even the Bible says: "Truly I say to you, unless you turn and become like children, you will never enter the kingdom of heaven. Whoever humbles himself like this child, he is the greatest in the Kingdom of heaven." Mathew 18:3-4. It is also necessary to acknowledge the Israeli government's efforts in that such courses do not only disseminate well thought of knowledge, but also is a great step in uniting the world. In six weeks 21 countries have been brought together, and indeed we enjoyed ourselves, learning together and from each other, just what the world should be in order to be peaceful.

Your Excellencies,
Distinguished Ladies and Gentlemen

It is a pleasure for me, on behalf of all of us, to offer a big thank you to Annat and Bracha, for being so open to us and exposing us to the rich history and culture of Israel. We are proud to bring to your notice that, we are not only proud owners of the Jerusalem Pilgrims Certificate, but have also been declared members of shalom club..

Special thanks also go to the entire staff of MCTC, most especially to Sonia and Soshana who provided us with the necessary energy, the force we needed to drive through such an intensive course.

Finally, we want to seize this singular opportunity to register our sincere and heartfelt thanks to Janette. Janette, we are greatly impressed not only by your high display of knowledge and academic professionalism, but also by your openness and consistency in dealing with us. We found in you a real source of inspiration that will ever remain implanted in our minds. Thank you very much Janette!

To Fannette, Director of the centre, we want to assure you that we will not only go back to our families, who have missed us for so long a time for a happy reunion, but are prepared to educate men on the needs of a woman and vice versa, and at the same time strive to improve the teaching of science in our respective communities. We are aware that the task is not an easy one, but we do count on your support and with God's guidance we shall do our best as Ambassadors of Israel. As we go, we carry fond memories of your country, we are sure we will miss Israel, but we promise to continue to share your problems and pray for you as we have always done. Rest assured, we shall keep in touch.

Thank you.